REMARKS

Claims 1-20 currently stand rejected and remain pending. Applicant respectfully traverses the rejections and requests allowance of the claims.

Requirement for Information

The Examiner has requested information regarding joint research between applicant, Cisco Systems, and Hitachi Data Systems within the scope of the claims of the instant invention (OA, p. 2, item 1). Except for the public documents that are provided in the attached IDS, applicant has found no further information that is relevant to the examination.

37 C.F.R. § 1.75 Objection

Claims 3-6 and 13-16 stand objected to under 37 C.F.R. § 1.75(c) as being of improper dependent form. The Examiner stated that the "claims merely recite an intended use for the claimed invention and thus fail to further limit the claims from which they depend" (OA, p. 3, item 2). Applicant respectfully disagrees and requests allowance of the claims.

Claim 3 recites a data storage system of claim 1 wherein a second storage system is less than 20 miles from a customer premises. Claim 3 refers back to and further limits claim 1 as required by 37 C.F.R. § 1.75(c). Claim 3 includes every limitation of the claim on which it depends as required in MPEP § 608.01(n). Whether or not a dependent claim recites an intended user is not commented on by MPEP § 608.01(n). The 37 C.F.R. § 1.75(c) objection to claim 3 should therefore be withdrawn.

Claims 4-6 and 13-16 contain limitations similar to those of claim 3 and should be allowed for the same reasons as claim 3.

35 U.S.C. § 103 Rejection

Claims 1, 3-6, 9-11, 13-16, and 19-20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Application No. 2004/0233910 (Chen) in view of the Applicant Admitted Prior Art (AAPA) in the Current Application. Applicant respectfully traverses this rejection in light of the following discussion.

Claim 1 recites, in part, a *first storage system* at a customer premises configured to receive individual data files from a customer system and transfer the individual data files substantially in real time based on the individual file types via a *bonded Time Division Multiplex (TDM) connection.* A *second storage system* is configured to receive and store the individual data files on an individual file-by-file basis, and to then form blocks of data and transfer the blocks of data via an Internet Protocol (IP) connection. A *third storage system* is configured to receive and store the blocks of data. Chen lacks transferring a file from a first storage system over a bonded TDM connection to a second storage system and then transferring the file over an IP link to a third storage system.

In particular, Chen discloses a single storage server 240 (240a and 240b are identical to storage server 240) (Chen, para. 0066). Storage server 240 receives storage requests from client computers 210 via "data communication protocol (IP, TCP, and/or UDP) lines 220" (Chen, para. 0011-0012, and 0035). However, storage server 240 does not transfer data to a second storage system, as required by claim 1. Storage server 240 merely receives and stores data from client computers 210, but neither form of backup transfers the data to a second or third storage system as required by claim 1.

In mirroring, storage system 240 receives a file from client computer 210. The storage system writes the file to one disk drive and simultaneously writes the file to another disk drive (Chen, para. 0067). Neither mirroring disk drive in Chen transfers the file to a second or a third storage system as required by claim 1.

In replication, the contents of one disk drive 130 are periodically copied to another equivalent disk drive 130 (Chen, para. 0068). This process differs from claim 1 in several ways. First, the replication in Chen occurs periodically from one disk drive 130 to another disk drive 130 over a standard storage interface 260 (such as a Small Computer System Interface [SCSI], Fibre Channel, etc.) (Chen, para. 0035). Standard storage interface 260 is not equivalent to a bonded TDM connection or an IP connection, which are both required by claim 1.

Second, Chen fails to disclose replication copying that occurs on either a file-by-file basis or as a block transfer, while claim 1 requires transfer of the individual data files from a first storage system to a second storage system, formation of blocks of data including the individual data files by the second storage system, and transfer of blocks of

data from the second storage system to the third storage system. Chen fails to disclose replication on either a file-by-file basis or as a block transfer as required by claim 1.

Finally, Chen discloses only two disk drives at a time involved in replication, while claim 1 recites a customer system and a first, second, and third storage system.

Even if disk drive 130 is equivalent to one of the storage systems recited in claim 1, Chen does not disclose all the limitations of claim 1 for at least the aforementioned reasons. Applicant therefore requests withdrawal of the 35 U.S.C. § 103(a) rejection and allowance of the claims.

Additionally, in the recent Office Action, the Examiner admits that "Chen fails to explicitly disclose a bonded time division multiplex connection which transfers individual data files between the first and second storage systems on an individual file-by-file basis" (OA, p. 4). The Examiner indicates that "[i]t would have been obvious to one having ordinary skill in the art to incorporate the use of a bonded time division multiplex connection to transfer individual data files on an individual file-by-file basis with the storage network of Chen" (OA, p. 4). Applicant respectfully disagrees.

Chen does not discuss the need or desire for providing special framing interfaces that provide popular interfaces on the customer side and high-bandwidth communications on the network side over unbundled network elements. Chen teaches that "[b]oth data storage protocol types [NAS and SAN] are implemented using IP" (Chen, para. 0039). In fact, Chen teaches away from using a network protocol other than IP because "using IP as the network protocol allows the data storage control requests and data to be routed and transmitted in a wide variety of configurations" (Chen, para. 0039).

Chen also teaches that storage server 240 and disk drive 130 are connected via standard storage interface 260 (Chen, para. 0035). A standard storage interface is generally a connection that allows a computer to communicate with a peripheral device, such as SCSI, Fibre Channel, Integrated Drive Electronics (IDE), or Enterprise Systems Connection (ESCON). Standard storage interface 260 is neither a bonded TDM connection nor an IP connection. Applicant asserts that it would not make sense to link storage server 240 and disk drive 130 using a bonded TDM connection or an IP connection because such connections are not generally used to allow communication between a computer and a peripheral device.

Thus, applicant respectfully contends that no motivation exists to combine Chen and AAPA, and such indication is respectfully requested.

Independent claim 11 contains limitations similar to those of claim 1 and is therefore allowable over the art of record for the same reasons as claim 1.

Dependent claims 3-6, 9-10, 13-16, and 19-20 depend from otherwise allowable independent claims. Applicant therefore refrains from a discussion of these dependent claims for the sake of brevity.

Regarding claims 9-10 and 19-20, the Examiner asserts that AAPA discloses all the elements of these claims. Even if the Examiner's assertion is true, applicant maintains that it would not make sense to combine Chen and AAPA in regard to claims 9-10 and 19-20.

Chen discloses storage server 240 that supports two types of data storage protocols, SAN and NAS, wherein SAN transmits data at a block level and NAS is a File Level Access Protocol (FLAP) (Chen, para. 0039). AAPA discloses NAS system 102 that handles the receipt and transfer of files on an individual file-by-file basis in real time (Current Application, p. 3, lines 6-11). AAPA discloses a NAS system seemingly identical to the NAS data storage protocol described in Chen.

Claim 9 recites a data storage system wherein the first storage system is a NAS system and not a SAN switch. Claim 10 recites a data storage system wherein the first storage system transfers the individual data files to the second storage system on the individual file-by-file basis and not on a block-by-block basis. Applicant fails to understand how combining a SAN and NAS storage server (from Chen) with a NAS system (from AAPA) results in a NAS system that is not a SAN switch, as required by claim 9. Similarly, the combination does not result in a data storage system wherein the first storage system transfers the individual data files to the second storage system on the individual file-by-file basis and not on a block-by-block basis, as required by claim 10.

Further, applicant contends that the combination itself goes against common sense. Chen already discloses a storage server that supports both NAS and SAN data storage protocols. It is not clear what functionality is added by combining Chen with another NAS system. The combination does not do away with the SAN system in Chen, and to do so would be in direct conflict with the teachings of Chen.

Thus, applicant respectfully asserts that the combination of Chen and AAPA does not disclose all the elements of claim 9 or claim 10, and no motivation exists to combine Chen and AAPA for the rejection of claims 9 and 10.

Claims 19 and 20 contain limitations similar to those of claims 9 and 10 and are therefore allowable over the art of record for the same reasons as claims 9 and 10.

Claims 2 and 12 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Chen and AAPA in view of U.S. Patent Application No. 2002/0156984 (Padovano). A discussion of claims 2 and 12 is obviated in view of the discussion above distinguishing Chen.

Claims 7-8 and 17-18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Chen and AAPA in view of U.S. Patent Application No. 2003/0115204 (Greenblatt). A discussion of claims 7-8 and 17-18 is obviated in view of the discussion above distinguishing Chen.

CONCLUSION

Based on the above remarks, applicant submits that the claims in their present form are allowable. Additional reasons in support of patentability exist, but such reasons are omitted in the interests of clarity and brevity. Applicant thus respectfully requests allowance of the claims.

Included herewith is payment for the appropriate fee under 37 C.F.R. § 1.17(a)(1) for a one month extension of time (37 C.F.R. § 1.136(a)). The Applicant believes no additional fees are due with respect to this filing. However, should the Office determine additional fees are necessary, the Office is authorized to charge Deposit Account No. 21-0765 accordingly.

Respectfully submitted,

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